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(71) Applicants:
- **Munoz Perez, Julian**
  La Ceramica, 28038 Madrid (ES)
- **Quesada Jimenez, Marcelino**
  28038 Madrid (ES)
- **Martin Sanchez, Angel**
  28038 Madrid (ES)

(72) Inventor: **MARTIN SANCHEZ, Angel**
E-28038 Madrid (ES)

(74) Representative:
Polo Flores, Luis Miguel
c/Pradillo, 18. 18.
28002-Madrid (ES)

(54) PORTABLE MODULAR UNIT FOR URGENT FIRST AID TO A PATIENT

(57) The unit is comprised of a support means susceptible of autonomous independent displacement, and designed to be fixed to the bed (26) of a patient, provided with a receptacle for the various apparatuses of the assembly; said support incorporates a telescopic upright (19, 19') to each side, which can be manually fixed and which supports said receptacle at the upper part and which, at the lower part, is connected to arms (21) supporting the wheels (24), each upright incorporating pairs of angular, frontal, respectively inverted hooks (20) for its fitting to the foot of the bed.

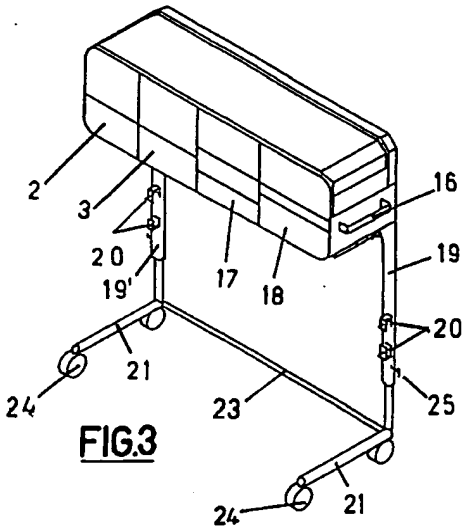

FIG.3

EP 0 903 141 A1

Description

OBJECT OF THE INVENTION

[0001] This invention refers to a portable modular unit for emergency patient attention, which offers essential new characteristics and notable advantages to known methods used in the current state of the art.

[0002] More specifically, the invention has foreseen the embodiment of a unit for urgent attention by combining a minimum of necessary elements to provide specific first aid to a patient who could need it for different reasons, in such a way that the aforementioned unit can be moved independently within the hospital area and, if necessary, outside it. The unit is a compact unit and can be attached to the patient's bed.

[0003] The application field of the invention is obviously included within the industry dedicated to the manufacture and commercialisation of articles used for medical attendance and treatment.

BACKGROUND AND SUMMARY OF THE INVENTION

[0004] It is well known that when a patient is admitted to an Intensive Care Unit (ITU), generally with assisted respiration, it is usually necessary to carry out certain tests outside the ITU, such as, for example, any form of CAT, echography or tests of any other type, requiring the patient to be moved outside the unit.

[0005] In order to move the patient a number of persons and medical attendance equipment, such as a cardiograph, a portable respirator, O_2 bottle etc. are needed. In particular, the quantity and duration of the O_2 in the bottle, and the monitor's battery can be a considerable limitation when the distance to be travelled is long or requires considerable time, which could cause that the patient's return journey has to be made without cardiographic control or oxygen.

[0006] Therefor, it is clear that there is a practical problem, requiring solutions to the disadvantages found by medical professionals in situations of the kind described above.

[0007] The object of the invention is to create a unit which effectively solves the given problems and combines the characteristics which could be considered desirable in an article of this kind.

[0008] To this effect, the invention has forseen the creation of a unit built on a support, capable of being moved on its own, independently, and also able to be adapted to a patient's bed, conveniently attached to it, and this support being able to hold different devices and instruments necessary to carry out their desired function. For this purpose, the support is supplied with a receptacle, with a lower base, preferably flat, onto which the various pieces of equipment making up the unit can be placed; part of this equipment can be varied according to its specific application and particular needs. The support has two lateral posts, each of which will preferably consist of individual sections which fit together like a telescope, with a fixing screw that can be operated manually, and which hold the upper part of the aforementioned receptacle which holds the various pieces of equipment, while in the lower part they are attached to their respective arms which extend forwards forming a right angle with the aforementioned lateral posts, equipped with lower wheels, and joined together at the corresponding bracing angle by a suitably locked rigid cross bar. At the front part, each of the mentioned posts has a couple of means of attachment, in respective inverted position, provided with openings for inserting the transversal bars of the foot of the bed when the unit is adapted to the patient's bed. There is a handle on each side of the receptacle, that is, on the exterior part of each lateral wall of the receptacle, while the rear wall of the receptacle contains sockets for electrical or other connections.

[0009] The invention has provided that, usually in all cases, the unit has a control and measuring device and a current supplying device next to it. In addition, the unit preferably consists of a respirator device for the patient and a monitoring and defibrillation device, the latter two being interchangeable with others that might be more appropriate for each specific application, although, as has been mentioned above, the preferred embodiment of the invention would include all four previously mentioned devices. These devices would be conventional in type and correspond to models which adapt best to the practical needs because of their functional and dimensional characteristics.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The detailed description following the object of the invention, refers to the attached drawings, in which, serving as example only and thus being of unlimiting nature, a preferred form of embodiment is shown. In the diagrams:

Figure 1 is a drawing of the view of the upper part of the invention unit,

Figure 2 shows a similar view to that of Figure 1, but with the four devices of the preferable embodiment in place.

Figure 3 illustrates a drawing of a perspective view of the invention support, and

Figure 4 shows a partial view, in diagram, in lateral profile, of a unit of the invention attached to a patient's bed.

DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

[0011] To carry out the preferred embodiment of the unit of the invention, permanent reference will be made to the drawings of the figures, in which similar parts have been designed with the same numerical references. Thus, firstly regarding Figure 1, a perspective view in diagram can be seen, of the upper part of the means (1) of support containing the devices (2, 3), of which device (2) will preferably be a control and measuring device, while device (3) will preferably be an electrical energy administration and supply unit. In accordance with the characteristics of the invention, the control and measuring device will be of the type incorporating pressure and O_2 content indicating manometers (4), which also incorporate a speaker (5) through which the operator can hear the phonendoscope pulses; this device will also preferably include sockets (6) for the respective aspiration, phonendoscope and pressure connections and it will have a conventional on/off switch (7) with a pilot light which indicates the condition of this device. The device itself (3) will consist of a current converter, with batteries assuring independent functioning for more than 120 minutes, a time which in normal conditions is considered to be longer than that usually necessary for the movement of the patient. This device is supplied with sockets (8). pilot lights (9) which indicate whether the electrical supply comes from the batteries or directly from the mains, and an on/off switch(10) with its own pilot light.

[0012] As can be seen in said Figure 1, both devices are placed adjacently onto the base (11) of a receptacle formed in the said support (1), with preferably frontal and upper openings, the posterior wall of which (12) includes sockets(13) for electrical connections and other bases (14) for connections of other types. Moreover, on each side (15) there is a handle (16) for facilitating handling of the whole apparatus.

[0013] Figure 2 shows a similar view to that of Figure 1, but with all four devices placed in position. In this case, apart from the control and measuring unit (1) and the energy supply unit (2) there is a breathing unit (17) and a monitor and defibrillator device (18), adjacent to the previous ones and occupying the rest of the space in said receptacle. Said breathing device (17) allows ventilation of the patient during movement and it is a conventional one, thus being provided with all the necessary means of control of the patient. Said monitor and defibrillation device itself includes the possibility of carrying out electrocardiograms on the patient when it is considered convenient.

[0014] As previously described, said apparatus can be easily transported to places independent from whether there is or not an electric supply socket nearby. As has been said, with normal apparatus consumption being of the type commented upon, it has been foreseen that the inventin has an electric autonomy of about 120 minutes, just, the same as the autonomy of the oxygen bottle. On the other hand, since these devices are separate, they may be easily exchanged according to the specific needs of every case.

[0015] As can be seen better in Figure 3, the base (11) is joined to the support (1) at the underside of the latter, to two support posts (19, 19'), each of which has a pair of support and holding means (20) with openings opposite to one another, those of each pair, due to the inverted positioning of each of said support means. The support posts (19, 19') are parallel to one another and linked uniformly to their respective parts (21) which go towards the front, being parallel to each other and forming a right angle with said support posts. Between both bracings or linkage areas of each post to its respective horizontal part, there is a cross bar (23) which reinforces and provides rigidity to said means of support. Moreover, each horizontal part (21) has at least a pair of wheels (24) which facilitate the movement of the apparatus as a whole.

[0016] As has been previously stated, each support post (19,19') will preferably consist of its respective portions which can be coupled in telescopic form, and be fixed in their desired positioning by means of screws (25) of any type, which can be manually adjusted. This logically means that it will be possible to adjust the height of the container receptacle of the various control and patient attendance devices.

[0017] Lastly, with respect to Figure 4, this a detailed, partially cut side view of the invention adapted to the patient's bed (26). In accordance with this Figure, the fixing means (20) fit with their respective openings into the transversal edges of the foot (27) of said bed (26), resulting in locking and thus allowing for the unit to be moved at the same time as the bed and accompany the patient wherever circumstances demand. This disposition is improved by the open lower front space, between both horizontal parts (21), since it can be adapted to very variable conditions in the absence of any transversal element on the bed.

[0018] Naturally, the unit can include all the conventional means of mechanical, electrical and/or electronic means considered necessary to conduct the various external connections which are self operating, plus all the pertinent supplementary means, depending on the specific application it is designed for.

[0019] It is not considered necessary to make the content of this description longer since an expert in the matter may understand its scope and the advantages derived from the invention, as well as develop and put into practice the objective of the same.

[0020] It should however be understood that the invention has been described according to a preferred embodiment, and may be susceptible to modifications without any essential alteration of said invention, said modifications may affect shape, size and/or materials used in manufacturing.

Claims

1. A portable modular unit for emergency patient attention made up of several necessary devices for patient attention, among which are included, in accordance with a preferred embodiment, a control device with several measuring devices, a separate unit for electrical supply, a respirator device for the patient and a monitor and defibrillation device, characterised in that said patient attention devices are separate modules but conveniently combined, as situated in the support which is a receptacle with a lower base (11) for carrying the devices, a back wall (12) provided with connection sockets (13, 14), respectively such as electricity supply and for other services, as well as their respective side walls (15), each with a handle (16), said receptacle being sustained by posts (19, 19') which are linked to each other on the inside end by a cross bar (23) and extend in the front through horizontal pieces (21), provided with wheels (24), and each of said posts has a pair of fixing means (20), with openings which are opposite one other because of the inverted positioning of each means (20) with respect to the other of its respective pairs.

2. Portable modular unit according to claim 1, characterised in that each support post (19) preferably consists of its respective portions being mutually coupled in telescopic form.

3. Portable modular unit, according to any of the preceding claims, characterised in that it incorporates a self-supporting oxygen bottle lasting at least 120 minutes, and because the electric supply device preferably consists of an electric converter with batteries lasting at least 120 minutes.

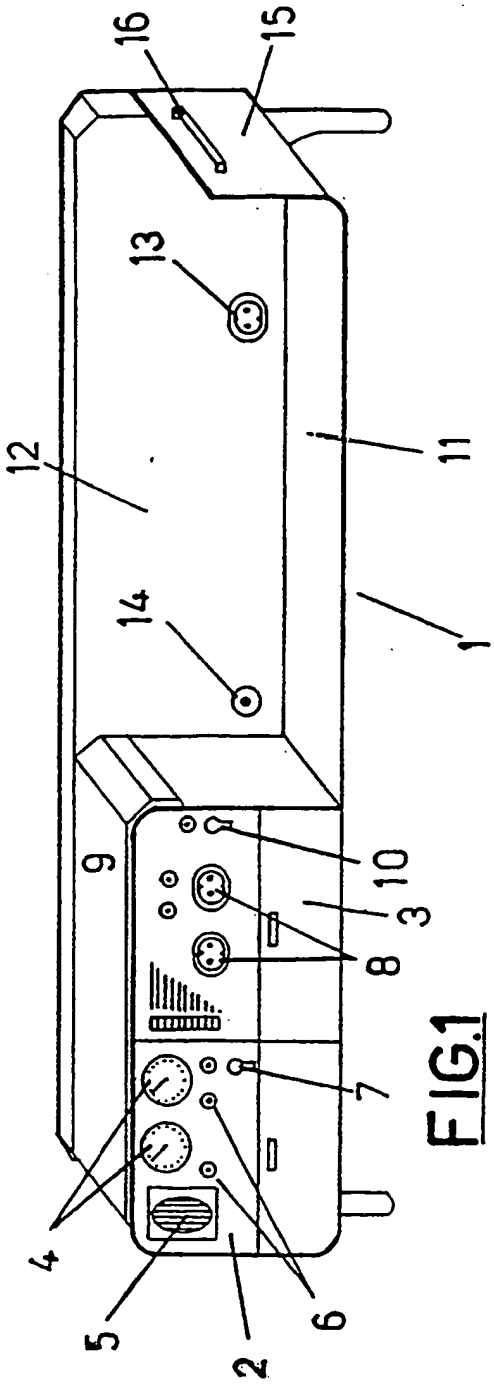

FIG.1

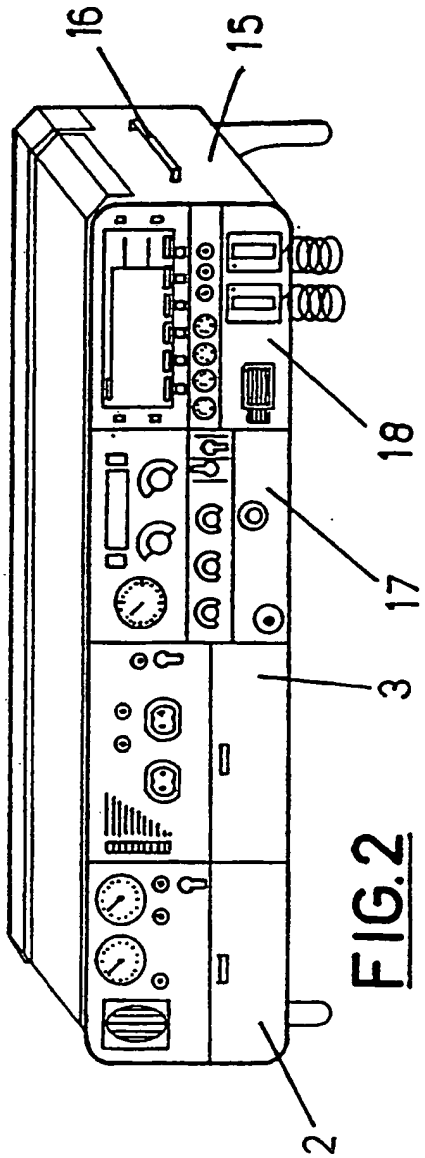

FIG.2

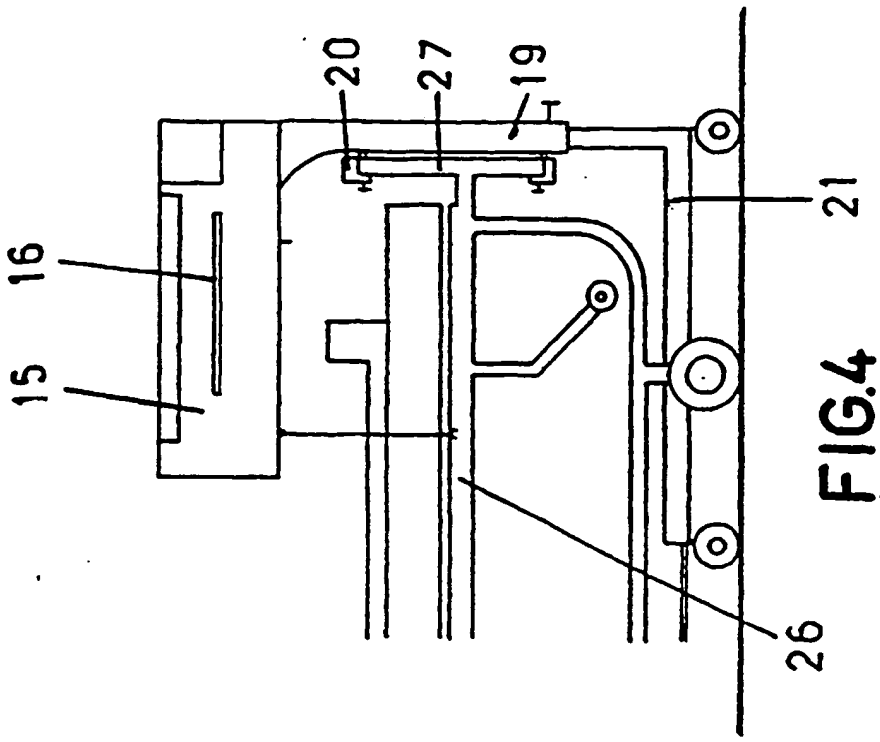

FIG.4

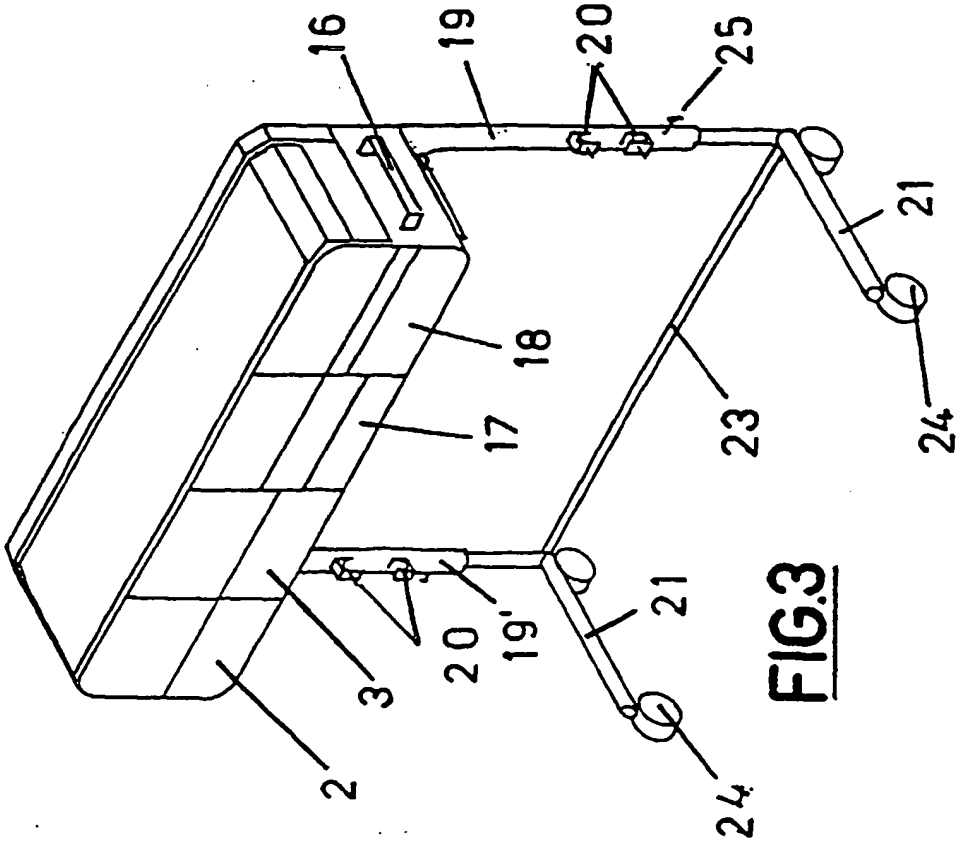

FIG.3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES 97/00303

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6: A61G12/00, 7/05

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6: A61G7/00, 7/05, 12/00, ECLA A61G7/00E, 12/00B, 13/00R, ICO K61G7:05

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, WPIL, CIBEPAT

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE-4228873-A (SIEMENS A. G.) 21 October 1993 (21.10.93) *column 3, lines 8-60; figures 1 and 2	1,3
A	WO-94/01023-A (HILL-ROM COMPANY INC.) 20.January 1994 (20.01.94), abstrac; page 27, line 7- page 29, line 7; figures 9 and 10	1,3
A	US-4592104-A (FOSTER ET AL) 03.06.85 3 June 1986 (03.06.86) *column 6, lines 51-64; figures 15 and 16*	1

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
8 April 1996 (08.04.96)	23 April 1998 (23.04.98)
Name and mailing address of the ISA/ S.P.T.O. Facsimile No.	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/ES 97/00303

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE-A-4228873	21.10.93	NONE	
WO-A-94/01023	20.01.94	AU-9346732	31.01.94
		US-5335651	09.08.94
		EP-651619	10.05.95
		US-5497766	12.03.96
		J-8501951	05.03.96
US-A-4592104	03.06.86	DE-3444537	20.06.85
		AU-8436337	13.06.85
		GB-2152365	07.08.85
		FR-2561099	20.09.85
		BR-8406219	01.10.85
		AT-8403881	15.08.86
		CA-1223702	07.07.87
		GB-2152365	25.11.87
		KR-8801073	22.06.88
		IT-1199234	30.12.88
		DE-3444537	28.04.94

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